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EXAMINER	
NELSON, MICHAEL B	

ART UNIT	PAPER NUMBER
1794	

NOTIFICATION DATE	DELIVERY MODE
06/04/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/567,901	FLEURY ET AL.	
	Examiner	Art Unit	
	MICHAEL B. NELSON	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 April 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-15,17-30 and 33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 4-15, 17-30 and 33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 04/02/09 has been entered. Claims 1, 4-15, 17-30 and 33 are currently under examination on the merits. The objections to the specification are withdrawn as a result of applicant's amendments.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1, 4-11, 28 and 30 are rejected as being unpatentable over Joret et al. (WO 01/37006), see English language equivalent (U.S. 6,924,037), and in view of Wolfe et al. (U.S. 5,563,734).

Regarding claim 1, Joret et al. discloses a transparent substrate with an antireflective coating of alternating high and low refractive index layers (See Abstract). Joret et al. also discloses using zirconium oxide and/or silicon nitride as the material for the high refractive index layers (C4, L30-40). Joret et al. further discloses that nitrides are advantageous in that they add heat treatable functionality to the laminate (C4, L40-55).

Joret et al. does not disclose that the high refractive index material be a mixed silicon zirconium nitride.

Wolfe et al. discloses a multilayer stack (See abstract) with high and low refractive index layers (C3, L1-20 and C4, L20-50, the first dielectric layer has a refractive index range of from 2.1 to 2.5, while the second dielectric layer has a refractive index range of from 1.98 to 2.08.). A silver layer of metal, 12, is disclosed as reflecting infrared radiation which makes it a solar control functional layer. The high refractive index layer is disclosed as being made up of inter alia zirconium oxide, silicon nitride or a composite film containing zirconium nitride and silicon

nitride (SiZrN) (C3, L1-20). Wolfe et al. further discloses that the refractive index of the composite high refractive index films (i.e. SiZrN) can be varied depending on the relative amounts of the different nitrides (C3, L20-35). Since SiZrN, ZrO and Si_3N_4 are listed as alternatively suitable high refractive index materials (with Si_3N_4 and ZrO also being listed in Joret et al.), it would have been obvious to one having ordinary skill in the art to have selected SiZrN because the variability of the refractive index thereof would enable a higher degree of freedom and control in selecting the particular refractive index of the high refractive index layer. The refractive index range of the high refractive index layer is disclosed as being between 2.1 and 2.5, which completely overlaps the instant claimed range (C3, L1-20).

Wolfe et al. does not specifically disclose that the ratio of Si/Zr in the SiZrN layer be between 4.6-5, however, given that Wolfe et al. discloses altering the relative amounts of the nitrides in the composite nitride in order to adjust the refractive index thereof (C3, L20-35), it would have been obvious to one having ordinary skill in the art to adjust, through routine experimentation, the ratio of Si/Zr in order to optimize the refractive index of the high refractive index layer. Accordingly, the ratio of Si/Zr is considered a result effective variable.

The inventions of both Joret et al. and Wolfe et al. are drawn to the field of coated laminates with high and low refractive index layers and therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to have modified the high refractive index material of Joret et al. by using the SiZrN material as taught by Wolfe et al. for the purposes of imparting increased control of the refractive index in the high refractive index layer and it would have also been obvious to have included a silver functional layer as taught by Wolfe et al. for the purposes of imparting solar control functionality to the layer stack.

Regarding claims 4-11, 28 and 30, modified Joret et al. discloses all of the claimed limitations as set forth above. Additionally Joret et al. discloses a laminate that reads on the limitations of instant claims 4-11, 28 and 30.

(See C3, L60-C4, L15, the refractive indexes and the thickness of the preferred embodiments of the invention fall within the claimed ranges of instant claim 4. See C5, L5-20, the materials for the second and fourth layers are disclosed as being, inter alia, silicon oxide, as in the limitations of instant claim 5. See C4, L60-C5, L5, the first and third high refractive index layers are disclosed as being made of several superimposed high refractive index layers, including silicon nitride, which has been shown to be obviously substituted with SiZrN from Wolfe et al as above. See the Table of C13, L5-20, and C13, L20-30. The properties of the examples in terms of calorimetery, reflection and TABER test fall within the limitations of instant claims 7-10. See C6, L20-C8, L25, the number of substrates, joining thermoplastic material, and coating on the opposite side meet the limitations of instant claim 11. The glazing laminate of Joret et al. (C5, L35-65) is capable of being subjected to heat treatment (C4, L35-55).)

6. Claims 12, 13, 16 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolfe et al. (U.S. 5,563,734).

Regarding claim 12, Wolfe et al. discloses a transparent substrate provided with a thin-film multilayer comprising an alternation of n functional layers having reflection properties in the infrared and/or in solar radiation and n+l coatings composed of one or more layers of dielectric material, in such a way that each functional layer is placed between two coatings,

characterized in that at least one of the layers of dielectric material is based on a mixed silicon zirconium nitride.

(See Fig. 1, C3, L1-20, Silicon zirconium nitride (SiZrN) is disclosed as being in the high refractive index layer, 6 and 8, with the second dielectric layer, 16, being the lower refractive index layer (C4, L20-50, n is between 1.98 and 2.08). The refractive index of the high refractive index layer is disclosed as being between 2.1 and 2.5, which substantially overlaps the instant claimed range with the lower endpoint lying within the range. The two dielectric layers are on either side of the silver functional layer, 12, which has infrared reflecting properties and is therefore solar controling (See Abstract).)

Wolfe et al. does not specifically disclose that the ration of Si/Zr in the SiZrN layer be between 4.6-5, however, given that Wolfe et al. discloses altering the relative amounts of the nitrides in the composite nitride in order to adjust the refractive index thereof (C3, L20-35), it would have been obvious to one having ordinary skill in the art to adjust, through routine experimentation, the ratio of Si/Zr in order to optimize the refractive index of the high refractive index layer. Accordingly, the ration of Si/Zr is considered a result effective variable.

Regarding claims 13, 16, 20-22, Wolfe et al. discloses all of the limitations as set forth above. Additionally Wolfe et al. discloses a transparent substrate which reads on the limitations of instant claims 13, 16, 20-22.

(See Fig. 1, the functional metal layer, inter alia silver, 12, lies between dielectric coating layers 8 and 16. See C3, L55-C4, L10, the Ni-Cr nitride layers, 10 and 14, on either side of the functional layers are disclosed as having a thickness in the range of 8-15

angstroms, or 0.8 to 1.5 nanometers, with the upper endpoint lying within the claimed ranges. See Table 1, C7-C8, the outer or cover layer is silicon nitride.)

7. Claims 14, 15, 17-19 and 25-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolfe et al. (U.S. 5,563,734) as applied to claim 12 above, and in view of Nadaud et al. (WO 03/010105), see English language equivalent U.S. 2004/0241406).

Regarding claims 14, 17, 18, and 25-29, Wolfe et al. discloses all of the claimed limitations as set forth above. Additionally, Wolfe et al. discloses that Silicone Zirconium nitride is a preferred high refractive index material (with n between 2.1 and 2.3) (C3, L1-20). Wolfe et al. does not explicitly disclose all of the specific limitations of instant claims 14, 17, 18, and 25-29.

Nadaud et al. discloses a transparent substrate meeting the limitations of instant claims 14, 17, 18, and 25-29.

(See [0037], a stack with two functional layers is disclosed. The first and last high-index dielectric layer have a thickness in the range of instant claims 17 and 18 (See [0040] and Table 1, 22.5 and 26 nm respectively). The high refractive index layer in between the two functional layers is disclosed as having a thickness falling within the range of instant claim 18 (See [0040] and Table 1, 62 nm). See Example 7, [0058], substoichiometric amounts of zinc oxide are disclosed as being placed both above and below the functional layer. See [0037], the two types of stacks (having both one and two functional layers) read on the limitations of instant claim 29 (replacing the silicon nitride of Nadaud et al. with the Silicon Zirconium Nitride of modified Wolfe et al.).)

In the combination of the two references, it would have been obvious to those having ordinary skill to use the Silicon Zirconium Nitride of modified Wolfe et al. over the Silicon Nitride of Nadaud et al. since the Silicon Zirconium Nitride can have a more finely tuned refractive index based on its ability to be blended at different atomic ratios (Wolfe et al. C3, L5-20).

The inventions of both modified Wolf et al. and Nadaud et al. are drawn to the field of antireflective functional glazings and therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to have further modified the structure of modified Wolf et al. by incorporating the structural arrangement of Nadaud et al., for the purposes of imparting improved heat treatments (Nadaud et al. [0040]).

Regarding claims 15 and 19 Wolfe et al. discloses all of the claimed limitations as set forth above.

Nadaud et al. does not explicitly discloses a transparent substrate characterized in that the multilayer comprises three functional layers alternating with four coatings, however it does disclose that the number of functional layers can be n with n+1 coatings (See Abstract) and furthermore that there could be 2 or more functional layers ([0023]), which implicitly discloses an embodiment where, at the very least, n=3 (i.e. "2 **or more**"). Furthermore, the thickness of the high refractive index dielectric layers is laid out to be between 55-70 nm in the coating layers between the functional layers and between 20 and 30 nm in the coating layers on the outside of the stack ([0040]). Subsequently it would have been obvious to those having ordinary skill in the art at the time of the invention to create a transparent substrate having the layered structure

which is implicitly disclosed to comprise 3 functional layers and 4 coating layers, as in instant claims 15 and 19.

8. Claims 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Joret et al. (WO 01/37006), see English language equivalent (U.S. 6,924,037), in view of Wolfe et al. (U.S. 5,563,734), as applied to claim 1 above, and further in view of Kimock et al. (U.S. 5,268,217).

Regarding claims 23 and 24, modified Joret et al. discloses all of the claimed limitations as set forth above. Modified Joret et al. does not disclose that the transparent substrate includes a DLC-based overcoat between 5 and 10 nm thick.

Kimock et al. discloses a transparent substrate with a DLC-based overcoat between 5 and 10 nm thick.

> (See C7, L55-65, 50 angstroms, or 5 nm, and (C13, L55-C14, L1), 100 angstrom, or 10 nm, thick diamond like carbon layers are disclosed as being created on the outer surfaces of substrate which have first been magnetron sputtered with, inter alia, silicon nitrides and zirconium nitrides (C5, L25-45) in order to improve abrasion resistance.)

The inventions of both modified Joret et al. and Kimock et al. are drawn to the field of coated laminates with high and low refractive index layers and therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to have modified the transparent substrate of modified Joret et al. by adding the DLC coating as taught by Kimock et al. for the purposes of imparting improved abrasion resistance.

9. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Joret et al. (WO 01/37006), see English language equivalent (U.S. 6,924,037), in view of Wolfe et al. (U.S. 5,563,734), as applied to claim 1 above, and further in view of Kida et (U.S. 5,354,446).

Regarding claim 33, modified Joret et al. discloses all of the limitations as set forth above. Additionally, Wolfe et al. discloses that Aluminum can be used to dope silicon during sputtering (C6, L10-33).

Modified Joret et al. does not discloses a magnetron sputtering target which would have a difference between the target and the layer.

Kida et al. discloses a plane or tubular, magnetron sputtering target for obtaining at least one layer comprising silicone, zirconium and aluminum,.

> (See C4, L40-57, a magnetron sputtering target is disclosed which is created via hot isostatic pressing and cold isostatic pressing (C8, L5-C10, L25), with the target including Si, Zr (Table 2, Example 15, C21-C22) and Al (C6, L12-20). Using the targets of Kida et al. to form the antireflective layered structure of modified Wolfe et al. would inherently have a degree of difference between the ratio of Si/Zr in the target as compared to the ratio in the layer. In the process of optimizing the ratio of Si to Zr in the layer coating as taught by Wolfe et al. (C3, L20-35), the target used would exhibit the instant claimed ratio difference. The target of Kida et al. is advantageous in that it does not exhibit peeling (C3, L60-C4, L10).)

The inventions of both modified Joret et al. and Kida et al. are drawn to the field of mixed silicon zirconium coatings and therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to have modified the targets of modified Joret

et al. by using the hot pressed target of Kida et al. for the purposes of imparting improved peel resistance.

Response to Arguments

10. Applicant's arguments filed on 04/02/09 are considered moot in light of the new grounds of rejection which were necessitated by applicant's amendments. Arguments which are still deemed to be relevant are addressed below.

11. Regarding applicant's arguments that Joret et al. in view of Wolfe et al. does not teach a silver layer, the examiner disagrees. Wolfe et al. teaches that a silver layer is useful for controlling solar infrared radiation.

12. Regarding applicant's arguments related to the use of silicon zirconium nitride, the examiner notes that applicant's arguments related, in general, to the advantages of silicon zirconium nitride over silicon nitride are not relevant since silicon zirconium nitride, in general, is already taught in Wolfe et al. as being advantageous over non-composite nitrides, including silicon nitride, because of the ability to fine tune the refractive index of a composite nitride layer by altering the relative amounts of the components of the composite when the layer is formed (C3, L5-35).

13. The relevant issue is whether or not the specific atomic ratio as instantly claimed is considered to be an unexpectedly beneficial ratio of zirconium to silicon. The examiner maintains that the relative amount of the components of a composite nitride would have been adjusted by one having ordinary skill in order to produce a composite nitride layer having an optimum refractive index in relation to the other layers in the stack (C3, L25-30). Wolfe et al. discloses that the composite nitrides are produced by "cosputtering from dual targets" (C3, L15-

18) and using this technique it would have been obvious for one having ordinary skill in the art to control (i.e. by controlling the power applied to each target) the relative amounts of the each nitrides in the overall composite nitride layer. Hence one having ordinary skill would have both the means and the motivation to optimize the refractive index of the composite nitride by adjusting the atomic ratio of zirconium and silicon.

14. Applicant again references the affidavit filed on 09/24/08 however the examiner maintains that only the data related to the refractive index of the mixed nitride (i.e. the second figure) is commensurate with the scope of the claims (i.e. the refractive index of the nitride is claimed, whereas the absorbance from the first figure is not instantly claimed). The examiner further maintains that the results shown with respect to the refractive index are not unexpected since the refractive index of the mixed nitride increases as more of the higher refractive index zirconium is added. Since the desired refractive index of the mixed nitride in Wolfe et al. is disclosed as being between 2.1 and 2.5 (C3, L5-7), through the routine process of optimizing the refractive index of the mixed nitride to fall within this range, one having ordinary skill would have produced a mixed nitride having an atomic ratio as instantly claimed.

15. The examiner further notes that in the second figure of the affidavit, only the two endpoints of the instantly claimed range are present for comparison to the overall trend. It is therefore unclear if the values between 4.6 and 5 possess the purportedly unexpected results. It is believed that these values would follow the same trend of a proportionally increasing refractive index with respect to the amount of zirconium present.

16. The examiner's response to arguments section of the previous office action is still relevant to the most recent arguments related to the affidavit:

17. “Regarding applicant’s arguments related to the various advantages of a SiZrN with the particular instant atomic ratio, the atomic ratio of the SiZrN material is shown above and below to have been a variable which one having ordinary skill in the art would have adjusted in order to optimize the refractive index. The additional advantageous properties of that material (i.e. other than the adjusted refractive index) do not carry patentable weight since “[T]he discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art’s functioning, does not render the old composition patentably new to the discoverer.” Atlas Powder Co. v. Ireco Inc., 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999).

18. Regarding applicant’s arguments that there is no disclosure in the cited prior art to provide adequate basis for a “recognized" result-effective variable, both Joret et al. and Wolf et al. provide disclosure which shows that varying the relative amounts of the different metals in a mixed oxide or nitride would result in the refractive index of the overall mixture being altered (See Wolf et al. C3, L20-35 and Joret et al. C5, L10-15 where the same principal is applied to a silicon aluminum mixed oxide). Given the disclosure in both prior art documents one having ordinary skill in the art would have found it obvious to have optimized the refractive index of the mixed oxide by adjusting the ratio of the metal components therein.

19. Regarding applicant’s arguments presented in conjunction with the 37 CFR 1.132 affidavit, the affidavit is insufficient to overcome the rejection of claims because it does not provide sufficient evidence to show unexpected criticality of the atomic ratio between 4.6 and 5.0. The most relevant figure in the affidavit is the second figure which shows that over the range of 4.6 and 5.0, as the amount of Zr is increased the refractive index of the mixed nitride

increase accordingly. This is entirely expected by one having ordinary skill since the refractive index of zirconium is higher than the refractive index of silicon and therefore in the process of optimizing the refractive index of the mixed oxide one would be able to raise the refractive index by adding relatively more zirconium (and conversely one would be able to lower the refractive index by increasing the amount of silicon). This process would provide the obvious advantage of adding a higher degree of freedom and control in selecting the particular refractive index of the high refractive index layer, which is known to be a highly critical variable in terms of the overall optical performance of the stack. Evidence provided which does not relate to the claimed ranges (i.e. 4.6 to 5.0) is not relevant since evidence of unexpected results must be commensurate with the claimed ranges. "Whether the unexpected results are the result of unexpectedly improved results or a property not taught by the prior art, the 'objective evidence of nonobviousness must be commensurate in scope with the claims which the evidence is offered to support.' In other words, the showing of unexpected results must be reviewed to see if the results occur over the entire claimed range. In re Clemens, 622 F.2d 1029, 1036, 206 USPQ 289, 296 (CCPA 1980)." (MPEP 716.02(d)). The overall trend of the graph in the second figure also supports the conventional expectation that increasing the amount of zirconium in the mixture would result in increased refractive index.

20. In response to the other properties mentioned in the affidavit (i.e. absorbance and color), the examiner asserts that these properties would be exhibited by the ZrSiN material after its refractive index had been optimized as detailed above. As with the properties cited at page 9 of the office action, "[T]he discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art's functioning, does not render the old

composition patentably new to the discoverer." Atlas Powder Co. v. Ireco Inc., 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999)."

Conclusion

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL B. NELSON whose telephone number is (571) 270-3877. The examiner can normally be reached on Monday through Thursday 6AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on (571) 272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David R. Sample/
Supervisory Patent Examiner, Art Unit 1794

/MN/
04/24/09